

FRIENDS OF THE PHILIP L. WRIGHT ZOOLOGICAL MUSEUM

SPRING 2020 (No. 35)

FROM THE CURATOR

WE'RE BACK!

I think I speak on behalf of everyone associated with the Philip L. Wright Zoological Museum here on campus when I say: **welcome to the new Friends of the Museum newsletter, and we are excited to reconnect with you!**

As many of you know, the PLWZM has undergone a huge number of changes in the last few years. Amidst all the excitement of our big renovation and simultaneous search for a new permanent curator (and here I am!), getting these newsletters out to our supporters is one of the important things that fell off the table. Fortunately, it's time to say hello again and bring you back on this journey with us.

I am excited not only to be the person steering the way for the museum going forward, but also the one who gets to share all the great news and updates with you. My plan is for each newsletter to be a snapshot of what we've been up to, with a Spring edition and an Autumn edition each year. If you'd like to keep pace with us in between, you can find us on Instagram, Twitter, and Facebook.

"Museum people" are used to working diligently in our quiet backrooms, understanding the fundamental importance of our work but often forgetting to throw the figurative doors open to share it with everyone else. I hope these newsletters will give you a sense of

what we're working on—all of which you help to support as a Friend of the PLWZM. We are lucky and deeply appreciative to have you on our team!

Angela Hornsby, Ph.D.
PLWZM Curator



ABOVE: Some of our Steller's jay (*Cyanocitta stelleri*) specimens housed in the new archival cabinets. (Apr 2020)



ABOVE: Ashley, Erin, and Spencer keep the prep lab busy on a Friday afternoon. Before the shut-down for COVID-19, our prep group completed 26 specimens over six weeks. (Feb 2020)

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RENOVATION: BEFORE

As far as projects go at the PLWZM, hardly anything could be more exciting than our massive renovation! It has progressed in several stages over the last few years, and involved both existing and brand new rooms that increased our square footage and vastly improved our capacity to properly curate our ~24,000 specimens.

FACILITIES BEFORE:

HS 212 Collections

Primary collections room, housing specimens used for research, teaching, and outreach. Crowded & dilapidated, with little space to grow.

HS 202 Classroom

Zoology classroom, functional but cramped, difficult to maneuver, and lacking projector and screen. Teaching specimens stored across the hall.

HS 201 Prep Lab

A fully functional space for the dirty business of specimen preparation. Lacked archival tissue storage and emergency back-up for freezers.



ABOVE: Former curator Dave Dyer showcases the diversity of specimens in the PLWZM collections—and the tight working conditions in the old collections room. (Fall 2012)

The museum collections were housed primarily in HS 212. As many of you will recall, this room became overwhelmingly crowded as the collections expanded over the decades, resulting in little space for work, tours, and growth. In addition to the crowding, the old, poorly sealed cabinets allowed frequent pest infestations that threatened the continued care and use of the specimens. Chemicals used in pest control, and dust from areas that were difficult to access and clean, also posed health hazards to workers in the museum.

If the PLWZM was to maintain its collections for the future, it was imperative that we were able to secure at minimum more space and updated cabinetry. The old conditions were simply not befitting a natural history collection of this size, quality, and historical importance. **This is where you, the Friends of PLWZM, stepped in with incredible generosity to help us renovate the spaces and infrastructure that support these specimens.** We thank you for playing an integral role in building a new future for our museum!

LEFT: Students squeezed into the old collections room. There was little space to spread out and tackle large projects. (April 2018)



RENOVATION: AFTER

Major renovations occurred over 2016-2019 with the support of the Friends of the PLWZM, the UM Division of Biological Sciences, the UM Office of Research and Creative Scholarship, and a \$500,000 National Science Foundation grant to Drs. Charlie Janson, Jeff Good, and Zac Cheviron. The updates are too numerous to list here, so we look forward to future newsletters where we can delve further into the details. Suffice it to say that we are thrilled with the outcome, and proud that our collections are now properly housed in state-of-the-art facilities for decades to come. **Even more, we view this as not only a renovation of our facilities, but also a renaissance in the types of work and student experiences we can support going forward.**

FACILITIES AFTER:

ISB 404 Research Collections

Newly built archival collections room for research-grade specimens. Brand new cabinets on an electric compactor system, with plenty of room to grow.

HS 202 Skull Storage

Renovated collections room with new shelves for large skull and skeleton storage, fluid specimen cabinets, and working space for processing accessions and loans.

HS 212 Multi-Use Classroom

Renovated zoology classroom with display cabinets and flexible layout. Adjoining storage room keeps specimens used in teaching and outreach close at hand.

HS 201 Prep Lab

Major upgrade to archival tissue storage with a -80 C freezer on emergency backup outlet. Minor updates continue to increase general storage and workflow.



ABOVE: New work spaces in the research collections room. (April 2020)

BELOW: Shelves awaiting large skulls and skeletons in the new storage room. (Oct 2019)



LEFT: Compacting cabinets slide to maximize space in the research collections. (April 2020)

BELOW: The renovated classroom, which used to be the collections room. (Oct 2019)



OUR FIRST GRASLIE CURIOSITY INTERNS

When Emily Graslie—Chief Curiosity Correspondent at the Field Museum, host of the science YouTube series “The Brain Scoop,” and former PLWZM volunteer extraordinaire—was honored at the UM Odyssey of the Stars in 2019, administrators asked what she’d like in celebration. In typical Emily fashion, she said: **I’d like to see more opportunities for students to work in the Phil Wright Museum, so they can develop their own love of natural history collections.** And so with the help of our friends at spectrUM and generous donors, the **Graslie Curiosity Internship** program was born!

We are working to build an endowed fund to support student internships like this going forward. Contact us to learn more or contribute!

This program funds undergraduate students to pursue their own passion projects in the PLWZM, which they pitch in a competitive application process each fall. Our Graslie Interns were hard at work this semester, remaining adaptable and optimistic as campus closed for COVID-19 and they needed to finish their projects remotely. Their enthusiasm breathed fresh life into the museum, and their work will give us great new resources for bringing natural history to students of many ages.

NICKY PHILLIPS (WILDLIFE '20)

Hello, my name is Nicky and this semester I graduated from the University of Montana with a bachelor’s degree in Wildlife Biology. During my last semester I was awarded a Graslie Curiosity Internship where I had the opportunity to articulate my own deer skeleton. This has been a fun, rewarding, and challenging project to work on. So far I have cleaned the bones using dermestid beetles, followed by bleaching. After that I spent hours placing the leg bones together and solving the puzzle this skeleton presents. I have also built a stand and found a way to make a custom fit to the length of my mule deer. My plan is to place anatomically correct straps on two movable legs to represent tendons and ligaments. My goal is that this deer will be used for education and outreach and, inspire many to become interested in the bio-mechanics of animals. I am thankful for this opportunity as well as excited about what the future may hold.

JUSTIN RUBY (WILDLIFE '21)

This internship has been a fantastic experience! Even despite the changes COVID-19 brought, the flexibility the internship offers allowed me to complete it remotely. Before the switch to remote I was able to create a small series of black and white photos of skulls for the museum to use in various ways; however, the main portion of my project was scanning skulls with my camera and converting them into 3D models for printing. I scanned a total of 18 skulls from different species, most of which kids don’t typically see at outreach events. These are critical tools, especially for younger kids who quickly lose interest if all they can do is look at skulls. The printed plastic skulls allow kids to fully play without concern—one skull was even dropped on accident, and was completely unscathed (exactly what we were looking for!). These skull replicas allow the kids to articulate the jaws and see and feel how they work on their own. In my experience, giving kids autonomy to feel like a real scientist is critical to getting them excited and making science

BELOW: Graslie Curiosity Interns Nicky and Justin.



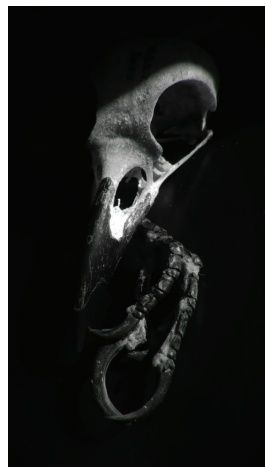
Special thanks to Jenn and Darin Bell, spectrUM, Jeremy Canwell, Kallie Moore, and Hila Chase for their support of this program.

approachable. I scanned and modeled most skulls using just a point and shoot camera (a phone camera would even work if one desired) and free software. I have made a guide for anyone who would want to continue scanning skulls. I greatly appreciate the opportunity to complete these projects and express my creativity in a form that provides educational equipment for the zoological museum.



ABOVE: Nicky Phillips teaches how to handle a red-tailed hawk specimen at spectrUM. (Feb 2020)

BELOW: Justin Ruby shut off artificial lights to get the best 3D scans of specimen surfaces, setting the stage for slivers of natural light to make dramatic photo opportunities. (Spring 2020)



ABOVE: Nicky Phillips displays her work-in-progress articulation of a mule deer skeleton. (April 2020)

BELOW: Justin Ruby shares a 3D-printed plastic black bear skull replica at spectrUM Discovery Area. (Feb 2020)



BY THE NUMBERS

July 2019 - April 2020

Specimens Prepared (over 6 weeks)	26
Research Loans / Specimens	8 / 93
Education Loans / Specimens	8 / 49
Outreach Loans / Specimens	8 / 15
Interns / Hours	3 / 286
Volunteers / Hours	6 / 84
Tours / Participants	13 / 198
Days when everyone in the prep lab elected to put menthol rub under their nose ("Mustelid Day" may not become a tradition)	1

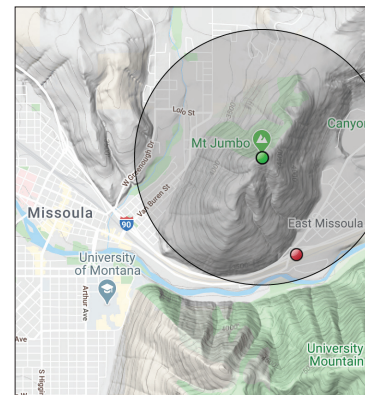
BACKROOM NOTES

WORK IN THE TIME OF COVID-19

With so much of life in tumult from the coronavirus that emerged in late 2019, it feels sometimes cheap to be concerned about the museum projects we've had to put on hold. We are more than anything thankful for our Missoula community in helping to slow the spread of the virus in this region. Still, it was sad to have to pause our students' good work.

Needing something that could be done remotely, we pivoted to the desk work of **georeferencing**: converting written locality descriptions to latitude and longitude coordinates. This makes mapping quick and easy, and is an important step to increase the use of our collections by researchers who are likely to search for specimens based on their coordinates. Georeferencing is one part biology, one part geography, one part detective work—and with 17,000 specimens not yet georeferenced, there is plenty to occupy us!

RIGHT: We use the free web application GEOLocate, built for georeferencing natural history collections, as our first-pass in searching for lat/longs. With just the locality as given in the specimen record, it's usually successful in narrowing down potential locations (here, the green point on Mt. Jumbo) while estimating uncertainty (shaded circle).



WHO'S IN THE MUSEUM

GRAD STUDENTS: **Nathanael Herrera** and **Erin Keller** were Graduate Curatorial Assistants, helping with renovation and prep lab, respectively. **Hila Chase** began to tackle an update to our display case on the second floor of Health Sciences.

UNDERGRAD INTERNS: **Nicky Phillips** and **Justin Ruby** were our stellar Graslie Curiosity Interns, detailed on earlier pages. **Ashley Skartved** filled her Wildlife Experiential Learning Internship hours in the prep lab and cataloging the teaching collections.

UNDERGRAD VOLUNTEERS: **Spencer Kim** returned for his third year volunteering with the PLWZM—great to have some experienced hands in the prep lab! **Chloe Cosgrove** learned the prep lab ropes, and moved and organized one of our fluid cabinets. **Samantha Getty** started to clean out and inventory the pelt cooler... and learned how quickly deer hair can clog a shop-vac!

FRIENDS & VISITORS: **Larry DePute** continued his speciality of bird skeleton articulation, most recently putting the finishing touches on a great blue heron. He also helped **Mike Kinsella** and **Kara Cromwell** fish for parasites in the guts of several osprey from **Erick Greene**. **Ben Deeble** and **Mafalda Ferreira** visited to sample feathers and fur, respectively, and high school student **Peter Peragine** 3D-scanned raptor talons with Hila. Our displays have started to come together thanks to **Lisa Bickell**, and Nicky's deer articulation started coming together with help from former PLWZM student **Jude Nickison**. We hosted **Jenn and Darin Bell**, and 8 of their friends, for an "Evening at the Museum" to say thanks for the support they gave us at spectrUM's Big Night fundraiser!



ABOVE: Sam Getty was working to clean and inventory the pelt room before the COVID-19 shutdown. (March 2020)

MISCELLANY

SAVE THE DATE! Our fingers are crossed that we will be able to host a **Friends of the PLWZM Reception** on Thursday, Aug 20, 2020, 11:30 AM - 1:00 PM. If so, a detailed invitation will follow.

Our renovation was featured in the Montana Kaimin student newspaper on Feb 5, 2020.

If social distancing restrictions allow, we will be running the new **Montana Natural History Workshop** in Aug 2020. In this partnership with the Montana Natural History Center, we will lead Montana college students on a comprehensive, hands-on, 10-day exploration of our state's natural history in both the museum and the field.

FROM THE DIRECTOR

SECURING THE PAST, ENABLING THE FUTURE

Hello Friends,

Thank you for your incredible support over the past few years! With your help, we have undertaken an ambitious renovation and expansion of the PLWZM. These steps have secured our rich historical collections, while enabling a vibrant future where the PLWZM can continue to expand as a critical repository for the biological diversity of Montana and beyond.

Our efforts have also reimagined the role that our museum can play in education and outreach. The new Curiosity Internship builds on Emily Graslie's remarkable legacy by providing a one-of-a-kind program to use natural history collections as a source of creativity and inspiration. Our new educational space has strengthened UM's core teaching mission to better serve our amazing students.

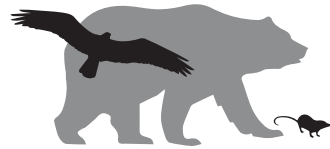
We will continue to build on these successes as we look for new and creative ways to partner with place, secure the past, and inform the future. We couldn't be more excited!

Jeff Good, Ph.D.
Associate Professor
PLWZM Director



OUR MISSION

The Philip L. Wright Zoological Museum, a unit of the Division of Biological Sciences of the University of Montana, is committed to the collection and preservation of zoological specimens for the purposes of research, education, and community outreach. We work for both current and future generations, sustaining these irreplaceable resources representing our natural heritage in Montana and beyond.



FRIENDS OF THE PHILIP L. WRIGHT ZOOLOGICAL MUSEUM

**SUPPORT ALL WE DO BY
DONATING TO THE PLWZM!**

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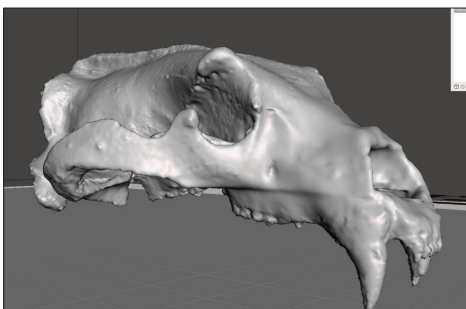
<http://hs.umt.edu/umzm/support.php>

All donations are tax deductible to the full extent provided by law.

Checks payable to: **University of Montana Foundation**
Memo: **Friends of the PLWZM**



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ABOVE: 3D skull model of a polar bear (*Ursus arctos*) from intern Justin Ruby's work. (Apr 2020)